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LETTER OFFERING COMMENTS ON FINAL REPORT REMEDICAL INVESTIGATION FIREFIGHTER TRAINGING AREA AND AUTO CRAFT AREA AND REQUESTING COMMENTS FORT STORY VA
11/8/2008
U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DEPARTMENT OF THE ARMY
US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
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MEMORANDUM FOR Directorate of Public Works (ATZF-PWE/Ms. Joanna Bateman), U.S. Army Transportation Center, 1407 Washington Boulevard, Fort Eustis, VA 23604-5306

SUBJECT: Document Titled: "Final Report Remedial Investigation, Firefighter Training Area (FTSTY-04), LARC 60 Maintenance Area (FTSTY-06), Auto Craft Building Area (FTSTY-07), Fort Story, VA", December 2002

1. The U.S. Army Center for Health Promotion and Preventive Medicine reviewed the subject document on behalf of the Office of The Surgeon General pursuant to Army Regulation 200-1 (Environmental Protection and Enhancement). We appreciate the opportunity to review this Remedial Investigation.

2. Our comments and recommendations are enclosed. In general they identify areas where improved text could be supplied, and where there were deviations from the conventional approach to risk assessment. However, we agree with the human health and ecological risk assessment outcomes. We look forward to supplying ongoing technical risk assessment support on this and other Fort Story projects.

3. The scientist reviewing this report and our point of contact is Mr. Larry Tannenbaum, Environmental Health Risk Assessment Program, at DSN 584-5210 or commercial (410) 436-5210.

FOR THE COMMANDER:

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CHRISTINE MOSER
LTC, MS
Acting Director, Health Risk Management

CF:
HQDA (DASG-HS-PE) (wo/encl)
IMA, NERO (IMNE-PWD-E) (w/encl)
USACE (CENWO-HX-H) (w/encl)
USAEC (SFIM-AEC-CD/Mr. Tony Perry) (w/encl)

COMMENTS AND RECOMMENDATIONS
Document Titled: "Final Report Remedial Investigation, Firefighter Training Area (FTSTY-04), LARC 60 Maintenance Area (FTSTY-06), Auto Craft Building Area (FTSTY-07), Fort Story, VA", December 2002

1. Pages 1-3 and 1-4, Section 1.2.2, L. Tannenbaum
   Site Descriptions and History
   Comment: Here and throughout the subject document, the sizes of the three sites are not provided. This lacking information hampered our ability to provide a more thorough review. Based on the site descriptions that *are* provided, it would appear that ecological receptors are not at any risk because not enough species representatives would be present, and/or individual animals would not be contacting the sites sufficiently to develop toxicological endpoints of concern.
   Recommendation: If the subject document is to be revised, please ensure that the site sizes (acreages) are provided.

2. Pages 1-5 and 1-6, Section 1.2.2, L. Tannenbaum
   Firefighter Training Area / LARC 60 Maintenance Area / Auto Craft Building Area
   Comment: The phraseology of detected analyte levels being at "above trigger levels" is used on several occasions, but the term is not qualified.
   Recommendation: Please explain what is intended by the identified phraseology, especially since this Section is not the subject document's Executive Summary".

3. Page 4-48, Section 4.5, L. Tannenbaum
   Auto Craft Building Area
   Comment: The reference here to the "detailed risk assessment" that was done, is problematic. The text says that data was screened against Applicable and Relevant and Appropriate Requirements (ARARs), and such screening is not a valid risk assessment technique. ARARs are environmental standards (e.g., environmental media concentrations) that are to be attained (in the event a remedial action is to be implemented).
   Recommendation: If the subject document is to be revised, please remove the reference to ARAR screening, or have the text note that ARAR screening represents a key departure from the conventional workings of human and ecological health risk assessment.
One reference to be removed, for example, is EPA Secondary maximum contaminant levels and Virginia Groundwater Criteria in the first paragraph of page 6-6.

4. Page 6-4, Section 6.2.1, L. Tannenbaum
   Inorganics
   Comment: The page's last sentence raises a few concerns. First, knowing that arsenic and iron are consistent with background levels, it would seem that these two chemicals should most definitely not be selected as contaminants of potential concern (COPCs). Second, at this point in the document, the reader does not know that a 'residential' risk-based screen could be appropriate, because specific human receptors have not been identified. (The reader can easily be misled into thinking that a residential screen was used in a perfunctory manner, when such

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should only be used if a valid residential site user is present.) Third, iron is very rarely carried through a human health risk assessment, and also, iron is a nutritional supplement.

Recommendation: Please endeavor to have the document address the points raised in the Comment.

5. Page 6-8, Section 6.2.1, L. Tannenbaum
   Inorganics
   Comment: There is an error in this Section's first sentence. Reference is made to iron being a carcinogen, and it is not so.
   Recommendation: Please make the necessary text correction.

6. Page 6-12, Section 6.2.1, L. Tannenbaum
   Estimates of Contaminant Intake
   Comment: At the start of the first full paragraph, the contract required quantitation level (CRQL) is mentioned in conjunction with the procedure for setting the concentration term. Previously however (see page 6-10), the "practical quantitation level" (PQL) was discussed, and not the CRQL.
   Recommendation: Please address the apparent discrepancy by pointing out which "level" is the correct one to use, and by indicating if concentration terms have been improperly set in the subject document.

7. Page 6-17, Section 6.2.3, L. Tannenbaum
   Toxicity Assessment
   Comment: The hierarchy of toxicological guidance information listed here has changed since the subject document was written. Note that the dated hierarchy also appears on page 6-49.
   Recommendation: Although the document may not be rewritten, please apprise all stakeholders of a hierarchy change, and inform them of possibly different risk assessment outcomes, were the new hierarchy to be followed.

8. Page 6-20, Section 6.2.4, L. Tannenbaum
   Risk Characterization
   Comment: Here and on page 6-38, the Section header is incorrect; "Non-cancer Risks" should be "Non-cancer Hazards". Note that there is no way in the field of ecological risk assessment to express "risk".
   Recommendation: Please make the necessary Section title name changes.

9. Page 6-39, Section 6.3.4. L. Tannenbaum
   Uncertainty
   Comment: The beginning of this Section (and the beginning of the last paragraph of page 6-53 as well; "Some uncertainty is inherent in the process of conducting predictive, quantitative health risk assessments.") could be more truthful.
   Recommendation: Please consider acknowledging that there is considerable uncertainty in the assessments.

10. Page 7-1, Section 7.1, L. Tannenbaum
Overview and Objectives
Comment: There are two apparent oversights regarding the listed ecological risk assessment guidance documents. First, Risk Assessment Guidance for Superfund, Volume II has been superseded for a number of years. Second, the 1997 USEPA Ecological Risk Assessment Guidance for Superfund is not listed but should be.
Recommendation: Please acknowledge the list presented here, being at variance with the convention that has been in place since 1997.

11. Page 7-10, Section 7.3.2, L. Tannenbaum
Exposure Pathways
Comment: It is not clear that "terrestrial plants growing within and adjacent to the sites" is an appropriate receptor grouping to consider. Given the decades-old contamination at the sites, if there should not be any signs of stress to plants, or if there should be no barren areas, there is no need to consider plants as receptors of concern. Also, small mammals can be challenged as being valid ecological receptors of concern. There are virtually no instances at Army sites where cleanups have proceeded with the purpose of protecting small mammals (as in rodents and the like).
Recommendation: Please acknowledge the points raised in the Comment.

12. Page 7-11, Section 7.4, L. Tannenbaum
Ecological Effects
Comment: The Section's first paragraph poses a difficulty. The ecological risk assessment effort that was done did not have the ability to identify "detrimental effects (i.e., reduced vigor or population decline)". All that was done was hazard quotient (HQ; desktop) calculation, and with this one cannot know that effects are occurring or evident in the field.
Recommendation: If the document is to be revised, please note the essential difference identified in the Comment.

13. Pages 7-12 and 7-13, Section 7.4.1, L. Tannenbaum
FTA Site
Comment: There are several misleading concepts in this Section. First, there is no mention of the shortcomings of "published phytotoxicity reference values". The published values prominently note that they are not to be used if a site should be adequately vegetated. Second, intermittent streams are discussed in the bullet paragraph "Soil/Sediment Invertebrates", but such streams are not valued for assessment. Third, there is a complication regarding the expressed diet of the Killdeer. The text first notes that the Killdeer prefers worms, and then notes that the Fire Training Area does not provide habitat where worms would be available. Why then is the Killdeer a selected receptor? Finally, although the site sizes are not provided (see Comment #1), it is clear that the Gray fox is not a valid ecological receptor for any of the three sites.
Recommendation: Please consider the issues raised in this Comment.

14. Page 7-21, Section 7.8.2, L. Tannenbaum
Summary of Uncertainties
Comment: This Section is deficient because there is no mention of the shortcomings of the HQ method. The shortcomings considerably compromise the ability to make potential-for-risk statements.
Recommendation: Please acknowledge the many shortcomings associated with the HQ method. A useful reference here is: Tannenbaum, L.V., Johnson, M.S., and Bazar, M., 2003. Application of the Hazard Quotient Method in Remedial Decisions: A Comparison of Human and Ecological. Human and Ecological Risk Assessment, Volume 9 (1): 387-401.

15. Page 7-22, Section 7.8.3, L. Tannenbaum
Ecological Significance
Comment: There is an error in the first bullet point; wildlife "risks" were not identified.
Recommendation: Please consider replacing "wildlife risks" with "wildlife potential for risk".

16. General Comment, L. Tannenbaum
Comment: Section 7.9 notes that maximum site concentrations were used in the HQ assessment. As a consequence, it cannot be said that a baseline risk assessment was done for the ecological receptors. Using maximum concentrations (and other maximum exposure assumptions) relegates the work done to the level of a screening exercise, and not a baseline risk assessment exercise.

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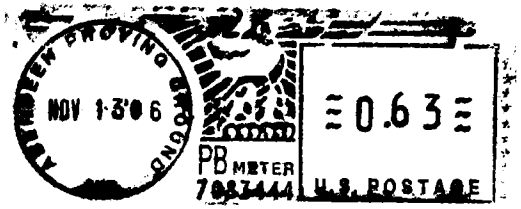

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